WALTER OTTESEN PATENT ATTORNEY

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TELECOPIER TRANSMISSION COVER SHEET

04-22-20	05 S. N. 10/664,155	1-703-746-6602
Date	File	Telecopier Number
To:	OIPE - Ms. Deshawn	
	Customer Service Center	
From:	Walter Ottesen	
Number of	Sheets (including cover sheet)	Twenty-Five (25)
Message:	As follow-up to our telep of April 22, 2005, the petition abandonment and the confirmation transmission are transmitted he Many thanks for all your	n to withdraw a holding of on of the original erewith.

Respectfully submitted,

Walter Ottesen Reg. No. 25,544

Certificate of Transmission

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. 703-746-6602) on April 22, 2005.

Walter Ottesen

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STN NO. COMM. ABBR NO.

11-15-2004

STATION NAME/TEL NO.

PAGES DURATION

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1-703-308-7751

WALTER OTTESEN PATENT ATTORNEY

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S. N. 10/664,155

TELECOPIER TRANSMISSION COVER SHEET

Date	File	Telecopier Number	
To:	OIPE		
	Customer Service Center		
From:	Walter Ottesen		
Number of	Sheets (including cover sheet)	Twenty-Three (23)	
Message: A petition to withdraw a holding of abandonment is transmitted herewith together with: (i) specification attached to declaration duly signed by applicants; (ii) statement by attorney that papers attached to declaratio are a copy of those filed in the PTO to get a filing dat (iii) transmittal of declaration for filing under 37 CFR 1.53(d); (iv) itemized date-stamped receipt (v) copy of cancelled check for \$130.00 showing payment surcharge set forth in 37 CFR 1.16(e); and, (vi) copy of notice of abandonment under 37 CFR 1.53(f) or (g).			

Respectfully submitted,

Walter Ottesen Reg. No. 25,544

Certificate of Transmission

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. 703-308-7751) on November 15, 2004.

WALTER OTTESEN PATENT ATTORNEY

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TELECOPIER TRANSMISSION COVER SHEET

11-15-20	004 S. N. 10/664,155	1-703-308-7751	
Date	File	Telecopier Number	
To:	OIPE		
	Customer Service Center		
From:	Walter Ottesen		
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Walter Ottesen Reg. No. 25,544

Respectfully submitted,

Certificate of Transmission

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. 703-308-7751) on November 15, 2004.

Walter Ottesen

In the United States Patent and Trademark Office

Applicants: G. Osburg et al Attorney Docket: A 91832

Patent Application Serial No: 10/664,155

Filed: September 17, 2003

For: Internal Combustion Engine having a Carburetor and a

Starting Device

Petition to Withdraw Holding of Abandonment under 37 CFR 1.181(a)

Commissioner for Patents and Trademarks P.O. Box 1450 Alexandria, Virginia 22313-1450

Dear Sir:

This application became abandoned because of applicants' failure to timely file a proper reply to the Office notice to file missing parts of nonprovisional application mailed on December 10, 2003 as noted in the notice of abandonment mailed on November 9, 2004.

The applicants had already complied with the requirements of said notice of December 10, 2003 by postfiling the following at the OIPE customer window on October 14, 2003:

- (a) Specification attached to declaration duly signed by applicant;
- (b) Statement by attorney that papers attached to declaration are a copy of those filed in the Patent and Trademark Office to get a filing date;
- (c) Transmittal of declaration for filing under 37 CFR 1.53(d); and,
- (d) A check in the amount of \$130.00 to cover the surcharge set forth in 37 CFR 1.16(e).

True copies of the items (a) to (c) as filed originally on October 14, 2003 are submitted herewith together with an itemized receipt date stamped on October 14, 2003 by OIPE at the customer window of the Office and a copy of cancelled check no. 5268 showing that the surcharge of \$130.00 referred to in item (d) above was received by the PTO.

A copy of the notice of abandonment under 37 CFR 1.53(f) or (g) is also submitted herewith.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

The Commissioner is hereby authorized to charge Deposit

Account 15-0773 for any fee required with respect to this petition.

In view of the foregoing, applicants' attorney respectfully requests that this petition be granted and that the notice of abandonment be withdrawn.

Respectfully submitted,

Walter Ottesen Reg. No. 25,544

Walter Ottesen
Patent Attorney
P.O. Box 4026
Gaithersburg, Maryland 20885-4026

Phone: (301) 869-8950

Date: November 12, 2004



United States Patent and Trademark Office

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address COMMISSIONER FOR PATENTS FO. Rev 1150 Advandar. Applins 22313-1150

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY, DOCKET NO, TITLE
10/664,155	09/17/2003	Gerhard Osburg .	A 91832

-Walter Ottesen Patent Attorney P.O. Box 4026 Gaithersburg, MD 20885-4026



CONFIRMATION NO. 4174 ABANDONMENT/TERMINATION LETTER OC000000014329814*

Date Mailed: 11/09/2004

NOTICE OF ABANDONMENT UNDER 37 CFR 1.53 (f) OR (g)

The above-identified application is abandoned for failure to timely or properly reply to the Notice to File Missing Parts (Notice) mailed on 12/10/2003.

· No reply was received.

A petition to the Commissioner under 37 CFR 1.137 may be filed requesting that the application be revived.

Under 37 CFR 1.137(a), a petition requesting the application be revived on the grounds of UNAVOIDABLE DELAY must be filed promptly after the applicant becomes aware of the abandonment and such petition must be accompanied by: (1) an adequate showing of the cause of unavoidable delay; (2) the required reply to the aboveidentified Notice; (3) the petition fee set forth in 37 CFR 1.17(I); and (4) a terminal disclaimer if required by 37 CFR 1.137(d).

Under 37 CFR 1.137(b), a petition requesting the application be revived on the grounds of UNINTENTIONAL DELAY must be filed promptly after applicant becomes aware of the abandonment and such petition must be accompanied by: (1) a statement that the entire delay was unintentional; (2) the required reply to the aboveidentified Notice; (3) the petition fee set forth in 37 CFR 1.17(m); and (4) a terminal disclaimer if required by 37 CFR 1.137(d).

Any questions concerning petitions to revive should be directed to the "Office of Petitions" at (703) 305-9282 Petitions should be mailed to: Mail Stop Petitions, Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.

A copy of this notice MUST be returned with the reply.

Customer Service Center

Initial Patent Examination Division (703) 308-1202

PART 2 - COPY TO BE RETURNED WITH RESPONSE

PLEASE DATE STAMP AND RETURN

Applicant(s): G. Osburg et al Patent Application Serial No: 10/664,155

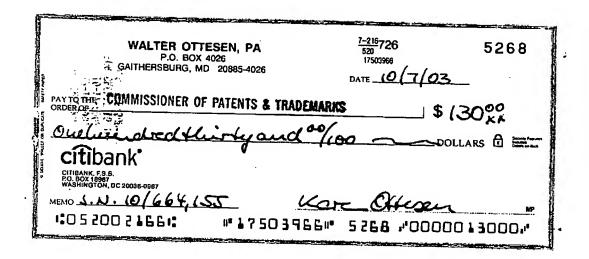
Attorney Docket No: A 91832 Filed: September 17, 2003

Title of Invention: Internal Combustion Engine having a

Carburetor and a Starting Device

THE FOLLOWING MARKED (X) ARE SUBMITTED HEREWITH:

Amendment	()	Applic. (p. 1 to 10) att. to Decl.	()
Assignment	(X)	Statement by Attorney that Papers	
Check for \$130.00	(X)	Attached to Declaration are	(X)
Check for \$40.00	(X)	Specification attached to Decl.	(X)
Prel. Amendment	()	Certified copy of German appl.	()
Drawings(s)		Transmittal of Certified Copy	()
Sheet(s)	()	Amendment under 37 CFR 1.312	()
Transmittal of		Information Disclosure Statement	()
Formal Drwg(s)	()	Fil. of Decl. under 37 CFR 1.53(d)	(X)
Response	()	Transmittal of Assignment	(X)
Letter	()	Request f. Corrected Filing Receipt	()
Transmittal Form	• •	Issue Fee Transmittal Form	()
(in duplicate)	()	Change of Correspondence Address	()



In the United States Patent and Trademark Office

Applicants: G. Osburg et al

Attorney Docket: A 91832

Patent Application Serial No: 10/664,155

Filed: September 17, 2003

For: Internal Combustion Engine having a Carburetor and a Starting Device

Transmittal of Declaration for Filing under 37 CFR 1.53(d)

Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450

Attention: Mail Stop Missing Parts

Dear Sir:

To avoid abandonment under 37 CFR 1.53(d), the applicants herewith submit the declaration in the above-identified application duly signed. A check in the amount of \$130.00 to cover the surcharge as set forth in 37 CFR 1.16(e) is also enclosed in order to prevent abandonment of the application.

The Commissioner is herewith authorized to charge any deficiency in the fee to deposit account no. 15-0773.

Respectfully submitted,

Walter Ottesen Reg. No. 25,544

Walter Ottesen Patent Attorney P.O. Box 4026 Gaithersburg, Maryland 20885-4026

Phone: (301) 869-8950

Date: October 9, 2003

In the United States Patent and Trademark Office

Applicants: G. Osburg et al Attorney Docket: A 91832

Patent Application Serial No: 10/664,155

APR-22-2005 11:05

Filed: September 17, 2003

For: Internal Combustion Engine having a Carburetor and a Starting Device

Statement by Attorney that Papers Attached to Declaration are a Copy of those Filed in the Patent and Trademark Office to Get a Filing Date

Commissioner for Patents and Trademarks P.O. Box 1450 Alexandria, Virginia 22314-1450

Dear Sir:

I, Walter Ottesen, state that I am the attorney for this application and that I have reviewed and found the specification (pages 1 to 10) and two sheets of drawing (FIGS. 1 to 3) as shown in my files to be the papers attached to the declaration of Gerhard Osburg and Wolfgang Luithardt for Internal Combustion Engine having a Carburetor and a Starting Device which accompanies this statement and I declare that these papers attached to the declaration are a true copy of the specification and any amendment thereto which I filed in the Patent and Trademark Office in order to obtain a filing date for this application on September 17, 2003.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so

made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Respectfully submitted,

Walter Ottesen Reg. No. 25,544

Walter Ottesen Patent Attorney P.O. Box 4026 Gaithersburg, Maryland 20885-4026

Phone: (301) 869-8950

Date: October 9, 2003

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Attorney Docket No: A 91832

Internal Combustion Engine having a Carburetor and a Starting Device

Background of the Invention

To crank start an internal combustion engine, especially a two-stroke engine, the mixture must be enriched. For this purpose, a great many systems are known. Accordingly, a choke flap is mounted in a carburetor upstream of a throttle flap in order to increase the underpressure during crank strokes so that an intense pumping of fuel is effected and thereby the mixture is made rich. In starting devices of this kind, it is problematic that the operator must timely at least partially take the choke flap out of use during run-up of the engine so that an overrich engine and therefore a stalling of the engine associated therewith is avoided.

Japanese patent publication 62060971 discloses that the choke flap of a carburetor automatically opens with the run-up of the engine. For this purpose, the underpressure increasing in the intake channel is used. It has, however, been shown that a system of this kind works too slowly so that a stalling of the engine because of overenrichment can still not be precluded.

Summary of the Invention

It is an object of the invention to provide an internal combustion engine having a starting device with which an overenrichment of the mixture is reliably avoided during the run-up of the engine.

The internal combustion engine of the invention includes a two-stroke engine and the internal combustion engine includes: an intake channel to which an air/fuel mixture is supplied in a

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flow direction; a carburetor for preparing the air/fuel mixture; a starting device configured in the region of the carburetor to enrich the air/fuel mixture during a starting operation of the engine; a bypass channel having a first end branching off upstream of the starting device viewed in the flow direction and having a second end opening downstream of the starting device; and, a switching valve mounted in the bypass channel and being movable from a position wherein the switching valve is essentially closed for starting the engine and, when the engine runs up, the switching valve being movable automatically into a less throttling position.

With the switchable bypass channel, it is ensured that an additional air path is enabled simultaneously with the run-up of the engine. This air path moves bypass air into the intake channel so that an overenrichment of the inducted air/fuel mixture is reliably avoided. The rapid switching of the bypass channel is achieved via a switching valve which is closed for starting the engine and, with the run-up of the engine, the switching valve switches automatically into a less throttling position so that the mixture is made lean and a continued running of the engine is ensured. Advantageously, the switching valve for opening the bypass channel is actuated by the combustion pressure in the combustion chamber of the engine because, with occurring combustion pressure, an ignition has taken place and the engine starts to run. It is especially practical to integrate the switching valve for the bypass channel into a decompression valve or to actuate the valve element of the switching valve by the switching element of the decompression valve.

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Brief Description of the Drawings

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The invention will now be described with reference to the drawings wherein:

FIG. 1 is a schematic of a two-stroke engine having a carburetor and a starting device;

FIG. 2 is an enlarged view in schematic section through the decompression valve shown in FIG. 1; and,

FIG. 3 is a schematic of another embodiment of a two-stroke engine having a carburetor and a starting device.

Description of the Preferred Embodiments of the Invention

The internal combustion engine 1 shown in FIG. 1 is a two-stroke engine having a cylinder 2. The combustion chamber 3 of the cylinder is delimited by the piston 4. The piston 4 controls a transfer window 5 as well as an outlet window 6 of the combustion chamber 3. The skirt 7 of the piston controls a mixture inlet 8 in the crankcase 9. The piston 4 drives a crankshaft 11 via a connecting rod 10. The crankshaft 11 is rotatably journalled in the crankcase 9.

The air/fuel mixture, which is necessary for operation, is prepared in a mixture preparation unit which, in the embodiment shown, is a carburetor 12. The carburetor shown in FIG. 1 is a membrane carburetor having a fuel-filled control chamber 13 which is supplied with fuel via an inlet valve (not shown) from a fuel pump 14. The control chamber 13 is connected to an intake channel section 17, which is configured as a Venturi, via idle nozzles 15 and a main nozzle 16. In the region of the idle nozzles 15, a rotatably journalled throttle flap 18 is provided. A starting device in the form of a choke flap 19 is mounted upstream of the intake channel section 17.

According to a feature of the invention, a bypass

APR-22-2005 11:06 WALTER OTTESEN 301 869 8929 P.15

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channel 20 is provided which includes two line sections 21 and 22. Referred to the flow direction 30 of the air/fuel mixture, the section 21 branches off upstream of the throttle flap 19 and the second line section 22 opens into the intake channel section 17 downstream of the choke flap 19. The line sections 21 and 22 are connected to each other by a switching valve 23 which is actuated when starting the engine. Preferably, the switching valve 23 is actuated by the combustion pressure in the combustion chamber 3 of the engine 1. In a special embodiment, the valve member 26 of the valve 23 is actuated by the switching element 27 of a decompression valve 24. The switching valve 23 is preferably integrated into the decompression valve 24. A seal (25, 36) separates the valve space 32 of the switching valve 23 from the interior space of the decompression valve 24 or from the ambient:

As shown in the enlarged view of FIG. 2, the decompression valve 24 comprises a valve member configured similarly to a valve plate 28 and this valve member is held so as to be displaceable via a valve shaft 29. The valve shaft 29 is resiliently biased by a spring 31 in the closed position of the valve plate 28.

The valve member 26 of the switching valve 23 is mounted on the valve shaft 29. In the open position shown in FIG. 2, the valve member 26 lies outside of the openings of the two line sections 21 and 22 so that these line sections are connected to each other via the valve space 32.

For starting, the decompression valve 24 is switched by depressing the valve shaft 29 into the open position so that the valve plate 28 is lifted from the valve seat and the

APR-22-2005 11:07 WALTER OTTESEN 301 869 8929 P.16

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combustion chamber is connected via a decompression opening 33 to the atmosphere. In this open position, the valve shaft 29 is latched via a spring-biased latch device 34.

In this start position of the decompression valve 24, the valve member 26 lies in the position 26' shown in phantom outline in FIG. 2 whereby the line sections 21 and 22 are separated from each other and no air can flow through the bypass channel 20. Downstream of the choke flap 19, a high underpressure therefore builds up which leads to an intense movement of fuel through the idle nozzles 15 and the main nozzle 16. The mixture is enriched for starting.

Most internal combustion engines 1 are manually crank started, for example, via a pull-rope starter or the like which engages the crankshaft 11. The start is facilitated because of the switched decompression valve 24. As soon as an ignition is triggered via the spark plug 35, the pressure in the combustion chamber 3 increases tremendously and acts on the valve plate 28 so that the latch device 34 releases because of the pressure force and the decompression valve 24, supported by the force of the spring 31, switches into the closed position shown in FIG. 2. The running-up engine draws more mixture through the inlet 6 with increasing rpm and, for this reason, the underpressure in the intake section 17 increases. With the closing of the decompression valve 24, the valve member 26 is simultaneously transferred into the open position of FIG. 2. For this reason, when the engine 1 starts to run, the bypass channel 20 switches into a less throttled position, especially into an open position. The starter device 19 is bypassed via the line section 21, the valve space 32 and the line section 22. The pressure in the intake channel section 17

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drops so that overenrichment of the mixture is avoided. The mixture leans because of the additional air supplied via the bypass 20 and the engine continues to run.

The embodiment of FIG. 3 corresponds to the embodiment of FIG. 1 and, for this reason, the same parts are identified by the same reference numerals. In lieu of a choke flap 19 as a starter device, the carburetor 12 includes an ancillary carburetor 40 which is configured parallel to the intake channel section 17 and bypasses the throttle flap. ancillary carburetor 40 is switched in and out via a check member 41 and moves more fuel into the intake channel section 17 in the start position of the throttle flap so that an enriched air/fuel mixture 30 is supplied to the engine. decompression valve 24 as well as the switching valve 23 is configured as described with respect to FIG. 1. member 26 lies in the position 26' of FIG. 2 when the decompression valve 24 is pressed and therefore open and locks the line sections 21 and 22. When the engine 1 runs up, the decompression valve is automatically closed by the compression chamber pressure and simultaneously actuates the switching valve 23 which lies in its open position when the decompression valve 24 is closed. The line sections 21 and 22 are flow connected to each other via the valve space 32 so that upstream of the ancillary carburetor 40, air flows through the line section 22, the valve space 32 and the line section 21 and opens downstream of the ancillary carburetor 40 into the flow path thereof, that is, into the intake channel section 17. When starting the engine, the bypass channel 20 is opened when the engine runs up so that more air is supplied downstream of the throttle flap 18 whereby the mixture is leaned. An

overenrichment is therefore reliably avoided and the engine remains running.

It is understood that the foregoing description is that of the preferred embodiments of the invention and that various changes and modifications may be made thereto without departing from the spirit and scope of the invention as defined in the appended claims.

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What is claimed is:

 An internal combustion engine including a two-stroke engine and said internal combustion engine comprising:

an intake channel to which an air/fuel mixture is supplied in a flow direction;

a carburetor for preparing said air/fuel mixture;

a starting device configured in the region of said carburetor to enrich said air/fuel mixture during a starting operation of said engine;

a bypass channel having a first end branching off upstream of said starting device viewed in said flow direction and having a second end opening downstream of said starting device; and,

a switching valve mounted in said bypass channel and being movable from a position wherein said switching valve is essentially closed for starting said engine and, when said engine runs up, said switching valve being movable automatically into a less throttling position.

- 2. The internal combustion engine of claim 1, wherein said essentially closed position is a block position for starting said engine and the less throttling position is an open position when the engine has run up.
- 3. The engine of claim 1, wherein said switching valve is actuated by the compression pressure in the combustion chamber of said engine.
- 4. The engine of claim 3, wherein said engine includes a

decompression valve and said switching valve has a valve member actuated by said decompression valve.

- 5. The engine of claim 4, wherein said decompression valve has a housing and said valve member is integrated into said housing.
- 6. The engine of claim 1, wherein said carburetor has a venturi section and said starting device is a choke flap mounted upstream of said venturi section.
- 7. The engine of claim 1, wherein said carburetor defines a main carburetor path and said starting device is an ancillary carburetor configured parallel to said main carburetor path.

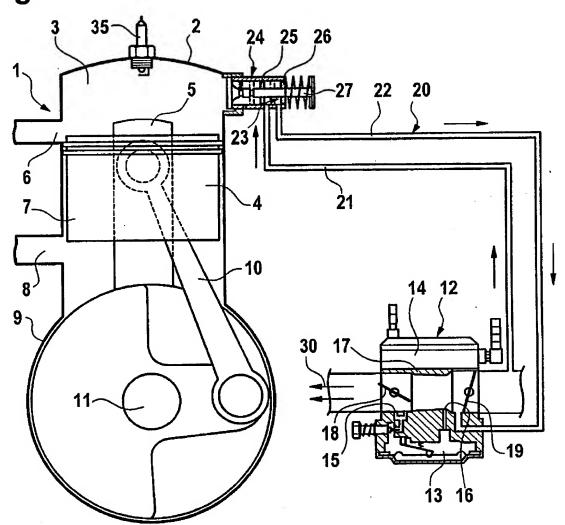
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Abstract of the Disclosure

A two-stroke engine has an intake channel via which the engine (1) is supplied with an air/fuel mixture prepared in a carburetor (12). The engine also has a starting device (19, 40) for enrichment of the air/fuel mixture during the start operation. The starting device (19, 40) is disposed in the region of the carburetor (12). To avoid an overenrichment of the mixture after start-up of the engine, a bypass channel (20) is provided which branches off upstream of the starting device (19, 40) viewed in the flow direction (30) of the air/fuel mixture and opens downstream of the starting device (19, 40). A switching valve (23) is mounted in the bypass channel (20) and is essentially closed when the engine (1) is started. When the engine (1) runs up, the switching valve (23) automatically switches into a position where less throttling occurs.

Fig. 1



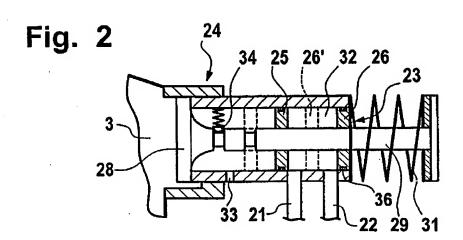
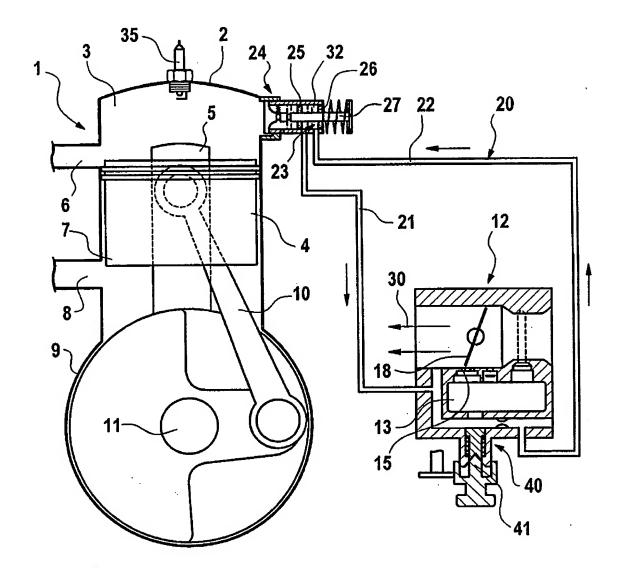


Fig. 3



Attorney Docket No. A 91832

Declaration and Power of Attorney for Patent Application

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: <u>Internal Combustion Engine having a Carburetor and a Starting Device</u>, the specification of which is attached hereto.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, $\S1.56(a)$.

I hereby claim foreign priority benefits under Title 35, United States Code, §119, of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application	on(s)	<u>Pri</u>	ority Clai	.med	
102 43 167.1 (Number)	Federal Republic of Germany (Country)	18 Sep 02 Date Filed	X Yes	No	
(Number)	(Country)	Date Filed	Yes	No	
As a named inventor, I hereby appoint the following attorney to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:					
	Walter Ottesen				
	Reg. No. 25,544				

Direct all telephone calls to Walter Ottesen at telephone no. (301) 869-8950 and address all correspondence to:

Walter Ottesen
Patent Attorney
P.O. Box 4026
Gaithersburg, Maryland 20885-4026

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor Gerhard Osburg	
Inventor's signature	Date 49.09 03
Residence 71394 Kernen, Federal Republic of Germany	
Country of Citizenship Federal Republic of Germany	
Post Office Address Steigstrasse 1/3, 71394 Kernen	
Federal Republic of Germany	

Full name of second joint inventor, if any Wolfgang Luithardt		
Inventor's signature in how	Date	19.09.03
Inventor a signature	Dace_	
Residence 71336 Waiblingen, Federal Republic of Germany		
Country of Citizenship Federal Republic of Germany		
Post Office Address Haldenweg 35, 71336 Waiblingen		
Federal Republic of Germany		